

Patent claims

1. Soil compacting device, having
 - an upper mass (1) having at least one drive, and having
 - at least two lower masses (2) that are coupled to the upper mass (1) and that are capable of oscillatory movement relative to the upper mass (1),each lower mass having:
 - a soil contact plate (6) and
 - at least one vibration exciter (7) allocated to the soil contact plate (6).
2. Soil compacting device as recited in Claim 1, **characterized in that** the vibration exciters (7) have two or more imbalance shafts (8), each bearing one or more imbalance masses, that are situated parallel to one another or at an angle to one another, and are capable of rotation in opposite directions to one another.
3. Soil compacting device as recited in Claim 1 or 2, **characterized in that** at least one of the vibration exciters (7) has a phase adjustment device for adjusting the relative phase position of the imbalance shafts (8) to one another.
4. Soil compacting device as recited in one of Claims 1 to 3, **characterized in that** the vibration exciters (7) are capable of being driven by the drive provided on the upper mass (1).
5. Soil compacting device as recited in one of Claims 1 to 4, **characterized in that** exactly one vibration exciter (7) is situated on each soil contact plate (6).
6. Soil compacting device as recited in one of Claims 1 to 5, **characterized in that** a resultant propulsive force in a direction of propulsion can be produced at least by one of the vibration exciters (7).

7. Soil compacting device as recited in one of Claims 1 to 6, **characterized in that** at least one of the vibration exciters (7) is situated in such a way that the horizontal component of the resultant force vector resulting from the imbalance shafts (8) rotating in opposite directions to one another is oriented in or opposite to a main direction (A).

8. Soil compacting device as recited in one of Claims 1 to 7, **characterized in that** at least one of the vibration exciters (7) is situated in such a way that the horizontal component of the resultant force vector that results from the imbalance shafts (8) rotating in opposite directions is not oriented in or opposite to a main direction (A).

9. Soil compacting device as recited in one of Claims 1 to 6, or as recited in Claim 8 in connection with one of Claims 1 to 6, **characterized in that** none of the vibration exciters (7) is situated in such a way that the horizontal component of the resultant force vector that results from the imbalance shafts (8) rotating in opposite directions is oriented in or opposite to a main direction (A).

10. Soil compacting device as recited in one of Claims 1 to 9, **characterized in that** at least one of the vibration exciters (7) is situated in such a way that the horizontal component of the resultant force vector that results from the imbalance shafts (8) rotating in opposite directions is oriented at a particular angle to a main direction (A).

11. Soil compacting device as recited in Claim 10, **characterized in that** the angle is 60° or 90°.

12. Soil compacting device as recited in one of Claims 1 to 11, **characterized in that** the upper mass (1) has a central control unit for controlling the vibration exciters (7).

13. Soil compacting device as recited in Claim 12, **characterized in that** the vibration exciters (7) are capable of being controlled individually by the control unit.

14. Soil compacting device as recited in Claim 12 or 13, **characterized in that** the control unit is fashioned for the setting of different rotational speeds of the imbalance shafts (8) in different vibration exciters (7).
15. Soil compacting device as recited in one of Claims 12 to 14, **characterized in that** the control unit is fashioned for the individual controlling of the phase adjustment devices provided on the individual vibration exciters (7).
16. Soil compacting device as recited in one of Claims 1 to 15, **characterized in that** some of the lower masses (2) each have a vibration exciter (7) having a phase adjustment device, while at least one other lower mass (2) has only a vibration exciter (7) that does not have a phase adjustment device.
17. Soil compacting device as recited in one of Claims 1 to 16, **characterized in that** the soil compacting device can be guided by hand and/or has a remote control device.
18. Soil compacting device as recited in one of Claims 1 to 17, **characterized in that** the soil contact plates (6) of the imbalance masses (22) are situated so as to be offset to one another in such a way that the tracks that can be produced on the soil that is to be compacted during movement of the soil compacting device in at least one main direction of travel overlap at least partially.